

The following is the body of the email that we received from the peer review of our article submission. -Lance

Manuscript ID 2010-Dec-TST-F-0464 entitled "The Physical Science International Kitchen: Making Physical Science Accessible to All" which you submitted to The Science Teacher, has been reviewed. The comments of the reviewer(s) are included at the bottom of this letter.

The reviewer(s) suggest some revisions to improve your manuscript. Therefore, I invite you to respond to the reviewer(s)' comments and revise your manuscript. Please keep a revision to an upper length of 2500-3000 words.

To revise your manuscript, log into <http://mc.manuscriptcentral.com/nsta-tst> and enter your Author Center, where you will find your manuscript title listed under "Manuscripts with Decisions." Under "Actions," click on "Create a Revision." Your manuscript number has been appended to denote a revision.

You will be unable to make your revisions on the originally submitted version of the manuscript. Instead, revise your manuscript using a word processing program and save it on your computer. Please also highlight the changes to your manuscript within the document by using the track changes mode in MS Word or by using bold or colored text. Once the revised manuscript is prepared, you can upload it and submit it through your Author Center.

When submitting your revised manuscript, you will be able to respond to the comments made by the reviewer(s) in the space provided. You can use this space to document any changes you make to the original manuscript. In order to expedite the processing of the revised manuscript, please be as specific as possible in your response to the reviewer(s).

IMPORTANT: Your original files are available to you when you upload your revised manuscript. Please delete any redundant files before completing the submission.

Because we are trying to facilitate timely publication of manuscripts submitted to The Science Teacher, your revised manuscript should be uploaded as soon as possible. If it is not possible for you to submit your revision in a reasonable amount of time, we may have to consider your paper as a new submission.

Once again, thank you for submitting your manuscript to The Science Teacher and I look forward to receiving your revision.

Sincerely,

Steve Metz
Editor, The Science Teacher
smetz@nsta.org

Reviewer(s)' Comments to Author:

Reviewer: 1

Comments to the Author

Check for gramitical construction and word usage in each of the labs - the spell checker will not find some of these errors

the material builds on past theory on constructivism and ties it in with research by Costa in 2001 - so it is dated but relevant

the cross-cultural connections are good and relevant to both teachers and students

Although safety concerns are 'mentioned' at the end of the article, the Apple Browning Lab sticks out with what I consider to be a glaring safety issue - that is using chemicals found in the kitchen or in the homes that are extremely harmful if ingested. For example, cleaner with ammonia and soda lye. It is apparent that the author is looking at the two extremes of the pH scale; however, it behooves us NOT to encourage MS or even HS students to investigate something that can be eaten, the browning apples, with these substances. The cognitive processes put forth by Costa can be met without the use of seriously dangerous items.

Delete these from the lists of items found in households that may be tested.

The Simple Machines Lab

I would eliminate the reference to using a corkscrew to opening a bottle of wine - especially since bottles of wine are not always available in other countries (consider that the Phillipines also has a Muslim community) AND we should NOT be using references to wine drinking in our MS and HS classes as the major story line for an investigation.

Also, careful with the reference to 'native people' -- local populations or indigeneous groups but not 'native' - consider what this connotes historically

and culturally

Eliminate this reference and write a more plausible and culturally sensitive story.

What is missing is the reconnection to the original premises - ties the inquiry together with metacognition - this is apparent for each of the investigations although specific rubrics for the inquiry are provided

In a sense, this article is putting a 'spin' on traditional inquiry activities but not really carrying through with making specific connections with constructivism (by correlating what the students may observe and discover with their prior knowledge as written by them in a journal or log - ie, What do you think? with their thinking after the conclusion of the activity, ie, What do you think now and why?)

This article could have a much stronger appeal and be strengthened by making direct correlations between student's prior thinking and what they may have to do after the activity to adjust their prior knowledge and to bring it into alignment with current scientific thought.

The mission of NSTA is to promote science learning for all.

Can you suggest ways to make this manuscript more inclusive with regard to gender,

multicultural awareness, and low-cost alternatives:

check language usage

check use of 'native'

have photos and items that really are found in other countries and perhaps not in the US or in DOD schools or in International schools

beware of cultural stereotyping

see previous comments in safety issues

Reviewer: 2

Comments to the Author

Loved this article. Very good. Just wondering, are the scenarios real or created :)

I found it to be very sound science and science process excellent.
are these scenarios real or created to be of interest to student?

Reviewer: 3

Comments to the Author

I would change the parts in Archimedes section so you don't refer to force(weight) in units of kg. Either call it mass or use different units. This only reinforces the misconception later on between mass and weight.

I would be sure to replace force with mass in the Archimedes section or convert the units to weight units (either Newtons - metric or pounds - english). Otherwise this tends to reinforce the misconception that force (wieght) is the same as mass.

The activity is safe but more mention of lab safety could be encouraged. Pictures included students with safety goggles, which is nice but otherwise the procedures are a little vague since students are supposed to come up with their own procedures.

The premise and results seem very clear, however, the in between steps are left open to judgement by the reader. Exactly, how are the new "items" being introduced or researched. Examples of student procedures would be helpful for some readers to make all the connections.

I was a little concerned (perhaps prudish) about a corkscrew to open wine as appropriate for junior high. I believe a bottle opener could replace it. Otherwise, I believe that the idea to make this low cost and relevant to the students' culture was very nicely done.

Reviewer: 4

Comments to the Author

An interesting idea and activities. Could use a bit more detail about what the students learned---perhaps connecting to National Science Content Standards in chemistry and physical science. Also, where in the curriculum is this used---in chem and physics?

In the procedure for the apple browning lab, "Develop a hypothesis, a prediction of which substances will work best to prevent browning in the apples." "Prediction" and "hypothesis" aren't the same; the former is a forecast, the latter is an explanation of that forecast.

This activity has some safety concerns. Students will be tempted to eat the

apples, and you are exposing them to potentially harmful chemicals like soda lye and ammonia.

Using a corkscrew is not appropriate, given its connection to alcoholic beverages. Given the focus on diverse cultures in this article, the author(s) should be culturally sensitive to religions that prohibit alcohol consumption, and develop a different scenario. There should be another kitchen implement that can be substituted.

All figures should be numbered and titled as "figures" instead of confusing labels like "picture" and "table"---see any TST issue for appropriate style.

The introduction claims to move students "from Costa's first level of thinking into the second level. Students will then move to the 3rd level..." This idea is not revisited in the later narrative, and should at least be included in the conclusion. Is there evidence that supports this claim, from actual HS classes? Aldo, the "culturally relevant" theme could be strengthened---how are kitchen utensils and apple browning really culturally relevant. The lead character is Egyptian, but could come from anywhere, and "freezing conditions in Argentina and drought conditions in Spain" hardly makes this culturally relevant for students. In fact, using the corkscrew might have the opposite result for Muslims, fundamentalist Christians, etc.

It's not altogether clear how the Archimedes task relates to kitchen utensils, so this connection might be strengthened.